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19 March 1964

SOVIET CHEMICAL AND BIOLOGICAL RESEARCH

Compilation of Abstracts

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AID Work Assignment No. 50-A
(Report No. 4 in this series)

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FOREWORD

This report was prepared in response to AID Work Assignment No. 50-A. It consists of twenty (20) abstracts requested by contractors of entries from AID Bibliography B-63-52. Bracketed numbers for each abstract refer to the number of the original bibliographic entry in the aforementioned bibliography. Other will be published at irregular intervals.

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[21]

Balandin, G. A.

Brucellosis - an Enteral Infection?

Zhurnal mikrobiologii, epidemiologii i immunobiologii, v. 33,
no. 7, 1962, 141-144

The author discusses brucellosis and its place in Gromashevskiy's classification of infectious diseases. In the author's view, brucellosis is not an enteral disease endemic in man, but is rather a disease of livestock belonging to a group of infections zoonoses.

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[29]

Bocharova, T. V.

The Effect of Irradiation on Immunity During Experimental Typhus. Communication I. A Study of Immunity in Irradiated Guinea Pigs Vaccinated Against Provachek's Rickettsia

Zhurnal mikrobiologii, epidemiologii i immunobiologii, v. 33,
no. 4, 1962, 23-26

Guinea pigs were vaccinated with sorbed typhoid vaccine following x-ray irradiation. No adequate immunity developed if the animals were vaccinated during well-expressed radiation sickness, although immunization in the very early stages of radiation sickness was considered to be adequate.

Card 1/1

[35]

Borod'ko, S. L., and L. G. Samsonovich

The Duration of Immunity in Guinea Pigs Immunized With Complex Live Plague, Tularemia, Brucellosis, And Anthrax Vaccine

Zhurnal mikrobiologii, epidemiologii i immunobiologii, v. 33, no. 2, 1962, 25-28

A complex of 3 vaccines was prepared according to Pilipenko's method: 1 ml of vaccine contained 1 billion plague and brucellosis microbes and 330,000 tularemia microbes. The vaccine was applied subcutaneously while 1 drop of undiluted anthrax vaccine STI was applied cutaneously. Approximately 6 to 7 months following complex immunization there was a greater decrease in immunity than in animals vaccinated with the corresponding monovalent vaccines.

Card 1/1

[59]

Titarenko, I. F.

Experimental Observations of Group-Associated Immunization With Anatoxin Aerosols (Tetanus and Staphylococcus)

Zhurnal mikrobiologii, epidemiologii i immunobiologii, v. 33, no. 2, 1962, 8-14

Inhalation of purified concentrated tetanus and staphylococcus anatoxins resulted in adequate immunization of rabbits and guinea pigs. No difference in immunization effect were noted between animals immunized separately with respective aerosols and associated tetanus-staphylococcus vaccine. Aerosol immunization following primary subcutaneous vaccination proved to be especially effective. Sera of immunized guinea pigs revealed the presence of twice the normal amount of γ -globulin and some increase in the β -globulin fraction.

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[65]

Guseva, N. A., and L. I. Fitonova

Tularemia Outbreak in Astrakhan' During 1957-1958 and its Causes

Zhurnal mikrobiologii, epidemiologii i immunobiologii, v. 33, no. 7, 1962, 19-22

Only 23,138 individuals had been vaccinated in the 5 years preceding the tularemia outbreak in Astrakhan'. In 1957, 228 cases were hospitalized; in 1958, 204 cases; and in 1959, only 10 cases. In 159 cases, the infection was transmitted through mosquito bites and in only 20 cases was the disease attributed to contact with the water rat (*Arvicola terrestris* L.). By 1959, 179,499 persons had

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been vaccinated against tularemia (70% of the city residents). Since the initiation of the mass immunization program only isolated instances of infection have occurred and these have been mainly in the vicinity of the natural infectious focus, located 40 km north of the city.

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[102]

Knyazeva, Ye. N.

Features Peculiar to the Course of Concomitant Brucellosis
and Q-Rickettsiosis in Guinea Pigs

Zhurnal mikrobiologii, epidemiologii i immunobiologii, v. 33,
no. 7, 1962, 125-130

Concomitant inoculations of guinea pigs with virulent strains of brucellosis and Q-rickettsiosis resulted in simultaneous manifestation of both diseases. Brucellosis, apparently, did not have a marked effect on the course of Q-fever. Animals which had Q-fever prior to brucellosis showed a higher rate of agglutinin formation and higher phagocytic neutrophil activity than the controls (brucellosis infection only). It is assumed that the reticulo-endothelial system was more active during concomitant infection than during either brucellosis or Q-fever. The final conclusions have been postponed pending the outcome of histological studies.

Card 1/1

[124]

Levkovich, Ye. N., and G. D. Zasukhina

Tissue Culture Vaccines Against Tick-Borne Encephalitis

Vestnik akademii meditsinskikh nauk SSSR, no. 1, 1960,
53-54

Tick-borne encephalitis virus (Pan strain) was grown in chick embryo culture and in a protein-free medium. The supernatant containing the viral suspension was inactivated with formalin (1:2000 at 37°C for 12 hours or at 20°C for 48 hours) and tested on mice either as a native or adsorbed vaccine. All vaccinated animals showed an increase in antibody titers, although the concentrated vaccine adsorbed by the aluminum hydroxide was more effective. Clinical evaluation indicated that the tested vaccines did not produce any significant local or generalized reactions.

Card 1/1

[125]

Leybenzon, A. S., and Luchsheva

Preliminary Data on the Cultivation of Tularemia, Brucellosis, and Plague Microorganisms in the Medium Containing Enzymatic Hydrolysate Amino-peptide-2

Zhurnal mikrobiologii, epidemiologii i immunobiologii, 31(12): 102-103, 1960

Microorganisms of tularemia, brucellosis, and plague were grown successfully in a medium containing 70% amino-peptide-2, 27.5% distilled water, and 2.5% agar-agar. Before culturing the medium was autoclaved (0.75 atmospheres for 10 min).

Card 1/1

[131]

Makushenko, G. T.

Operations of a Local Air Defense Fire-Fighting Team

Moskva, DOSAAF, 1960. 60 p.

A fire-fighting team of 3 to 4 men is required to prevent and to put out fires which may start as a result of an air attack. Team members are trained to fireproof the objects to which they are assigned and to be able to remove casualties. The brochure is supplemented by two tables of organization of typical teams. The equipment normally assigned to a unit is also listed.

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[133]
Markin, N.

Chemical and Radiological Reconnaissance Platoon in Attack

Voyenny vestnik, no. 12, 1961, 98-99

The function of a chemical-radiological reconnaissance platoon during offensive operations consists of a) joint reconnaissance with other services and b) independent monitoring of chemical and radiological conditions. A platoon can dispatch four personnel carriers capable of functioning as independent mobile observation units.

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[134]
Matveyetz, L. S.

Revaccination Study in Animals and Man During Tularemia

Zhurnal mikrobiologii, epidemiologii i immunobiologii,
31(2):14-22, 1960

Revaccination of guinea pigs with live tularemia vaccine tended to increase allergic reactivity, antibody titers, and resistance against infection in all animals tested. Analogous results were observed during revaccination of humans: the vaccination process was accelerated, antibody titers rose, while in general the clinical picture was of an allergic type. Primary vaccination and revaccination of subjects with lost immunity showed no differences in the process of immunological restitution.

Card 1/1

[139]

Mikhaylov, V. Ya., et al.

A Rapid Method of Diagnosis and Detection of the Anthrax Agent

Zhurnal mikrobiologii, epidemiologii i immunobiologii, 31(11):
10-15, 1960

A solid culture medium (4 parts of normal horse serum to 1 part of 3% agar in Hottinger's broth at pH 7.2-7.3) was used to culture Anthrax bacilli in a CO₂ atmosphere. No purification and isolation of the bacilli contained in the samples was necessary, although a preliminary increase in the number of spores was attained by filtration of bacterial suspensions. Microscopic (phase-contrast) examination of cultures, following a 4-hour period of incubation at 37°C, showed that the *B. anthracis* cells formed short chains enclosed in yellowish

Card 1/2

capsules of a distinct appearance. The cells of *B. anthracoides*, *B. pseudoanthracis*, and *B. mesentericus* were not encapsulated. The spores of *B. megatherium*, *B. mycoides*, and *B. subtilis* did not develop, while the representative pathogenic anaerobes could not be cultured.

Card 2/2

[147]

Muromtsev, S. N., and V. P. Nenashev

An Experimental Box-Chamber for Inhalation Immunization

Zhurnal mikrobiologii, epidemiologii i immunobiologii,
32(9):25-27, 1961

For inhalation immunization experiments a hermetically sealed chamber (120 x 182 x 200 cm) was designed. It proved to be useful in aerosol immunization of man and animals. The chamber can accommodate 5 to 7 men and is suitable for inhalation immunization with diphtherial anatoxin and sensitized pertussis vaccine.

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[148]

Muromtsev, S. N., and V. P. Nenashev

Ultrasonic Device for Dispersion of Aerosols. Communication 3.

Zhurnal mikrobiologii, epidemiologii i immunobiologii,
31(10):50-56, 1960

A portable ultrasonic aerosol disperser is 10 times more efficient than standard models and can produce droplets from 1 to 7 μ in size. A high-frequency generator supplies current to a barium titanate crystal immersed in the liquid of a cooling bath. The ultrasonic waves are focused by a lens, thus creating a vaporizing focal point on the liquids' surface. The device generates frequencies of 800 and 2400 kHz/sec.

Card 1/1

[154]

Nikolov, I. Ed.

Foundations of CBR Defense

Sofia, 1959, 463 p.

This book is intended to provide comprehensive information on the nature of nuclear and CBR weapons and possible countermeasures against them. As stated by the editor, this information could be of value to the members of the Bulgarian medical services. The volume consists of four parts and an introduction. The latter is a short review of NATO air forces and weapons which could be used in nuclear or CBR warfare. The following topics are discussed: Part 1. The fundamentals of nuclear physics, radioactivity, radiation-matter interactions, dosimetry, biological and physical effects of nuclear weapons radiation sickness, toxicology of radioactive compounds, and

Card 1/2

passive defense during nuclear attack. Part 2. Toxicological classification and the pathological effects of chemical weapons. Countermeasures and therapy. Part 3. Bacteriological weapons and countermeasures. Among the agents mentioned are: yellow and Q-fevers, ornithosis, Russian Far East encephalitis, Japanese encephalitis, smallpox, glanders, melioidosis, anthrax, tularemia, plague, botulism, and cholera. Part 4. The role of medical services in the civil defense effort, including the organizational principles.

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[156]

Ogarkov, I. P., et al.

Characteristics of Tularemia Outbreaks (1957) in the Urals and the Adjacent Regions

Zhurnal mikrobiologii; epidemiologii i immunobiologii, 31(9): 131-134, 1960

In 1957, tularemia outbreaks took place in the Kirovskaya, Sverdlovskaya, and Permskaya oblasts. The corresponding regional morbidity rates per 10,000 inhabitants were 4.21%, 2.76%, and 0.26% respectively. Clinical observations showed an overwhelming predominance of ulcerative-bubonic manifestations (92.2%). Only isolated instances of infection were reported in areas included in a systematic anti-tularemia vaccination program. As a rule, almost all of the patients

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were previously exposed to a direct contact with rodents. The onset of the epidemic was preceded by an increase in rodent population, and of water rats in particular. Correspondingly, the highest incidence of infectious foci was observed along river basins and closed water reservoirs.

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[159]

Olsuf'yev, N. G., and G. P. Rudnev, Eds.

Tularemia, Moskva. 457 p.

Partial Translation: JPRS: 14105

The first authenticated tularemia outbreak in the USSR took place in the Astrakhan' region in 1926, although there is evidence that some outbreaks occurred as early as 1877. Ever since the first positive identification of the disease was made, tularemia has attracted considerable attention from Russian physicians and epidemiologists. As in the case of other epidemics, the struggle against tularemia proceeded along two parallel pathways: on one hand the epidemiological aspects of the disease were assayed and adequate prophylactic methods developed, while on the other

Card 1/2

hand an effort was made to produce effective vaccines and to accumulate immunological and pathological data. Experimental material on active and passive immunity, vaccination effects, vaccines, and disease control methods are also included in appropriate chapters.

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[166]

Petrov, N. P., and Syrnev

Radioactive Emissions and Their Measurement

Moskva, Voenizdat, 1960, 190 p.

The book consists of four parts. Part 1 includes the following topics: radioactive decay, physical and chemical properties of ionizing radiation, basic dosimetric correlations, and the biological effects of ionizing radiation. Part 2 reviews dosimetric methods and instrumentation, including ionization chambers, gas-discharge counters, and photographic and emulsion techniques. Sources of radioactive contamination, types of nuclear explosions, and dosimetric measurements under field conditions are discussed in Part 3, while Part 4 deals with α - and γ -ray counters; x-ray counters, and radiation measurements. The book is intended for use by

Card 1/2

commissioned officers of the Soviet Army, DOSAAF instructors, and civilians.

Card 2/2

[168]

Pilipenko, V. G., et al

Concerning the Bacterial Dissemination Rate in Guinea Pigs After Cutaneous Inoculation With the Associated Antiplague, Tularemia, and Brucellosis Vaccine

Zhurnal mikrobiologii, epidemiologii i immunobiologii, v. 32, no. 1, 1961, 46-51.

In guinea pigs inoculated cutaneously with plague-tularemia-brucellosis vaccine the corresponding bacteria were detected after longer periods than in animals inoculated only with a monovalent vaccine. The generalized vaccination process and the specific immunity after concomitant inoculation occurred, however, with less frequency than in inoculations with a single vaccine.

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[177]

Priadko, I.

Chemical Reconnaissance During the Route March

Voyenniy vestnik, 41(3):40-42, 1961.

The author discusses the functions of a chemical and radiological (CR) unit numbering 3 to 5 men which is attached to the vanguard of an advancing unit. Tactically, the CR unit is subordinated to the commander of a vanguard and is equipped with radiation detectors; it is also capable of performing rapid analyses of soil, water, and air samples.

Card 1/1